

## REMARKS

The amendments and remarks presented herein are believed to be fully responsive to the Office Action.

Claims 1-16 and 18 are pending in the present application. Claims 2-5 and 15-18 have been canceled, claims 1 and 12 have been amended and claim 19 has been added.

The specification has been amended to correct faulty English set forth in the English translation of the PCT application. Claims are amended to particularly point out and distinctly claim the subject matter

## CLAIM REJECTIONS

### **A. Claim Rejections under 35 U.S.C. § 112**

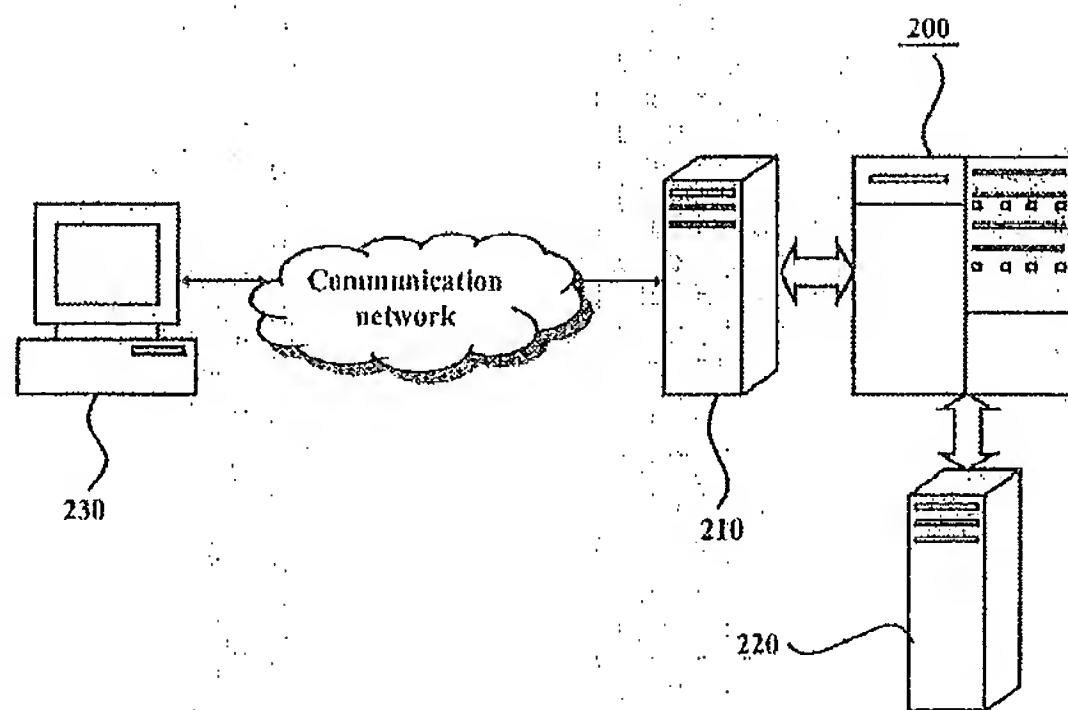
(1) To satisfy the written description requirement, a patent specification must **describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention.** See, e.g., Moba, B.V. v. Diamond Automation, Inc., 325 F.3d 1306, 1319, 66 USPQ2d 1429, 1438 (Fed. Cir. 2003).

(2) Claims 4, 5 and 16 are rejected under 35 U.S.C. § 112, first paragraph. Particularly, the Examiner pointed out that the added limitations of "the expansion keyword is in genus-species hierarchies..." are not supported by the original specification. Since claims 4, 5 and 16 have been canceled, the rejections thereof are moot. Further, in accordance with the Examiner's suggestions, Applicant respectfully amends claims 1 and 12. Claims 1 and 12 recite the limitations of "the expansion keyword representing an upper concept or a lower concept of the keyword," which are supported by the original specification. Therefore, Applicant submits that claims 1 and 12 comply with 35 U.S.C. § 112, first paragraph and are supported by the specification.

(2) Regarding claims 1 and 12, Examiner rejected these claims under 35 U.S.C. § 112, first paragraph, stating that new limitations "a process" and "one or more memories" are not supported by the original specification. Examiner stated that he "originally interpreted claims 1-5 and 12 to be directed to software and not structural features. It is possible to implement Applicant's invention as purely software." Applicant respectfully traverses Examiner's rejections. First, the patent law does not define the "purely software" invention. Further, the fact that Applicant's invention can be implemented as software does not exclude a machine from

Applicant's invention. Second, it is respectfully submitted that Examiner's interpretation of claim to be directed to software is not relevant to determine written description issue. The question is whether the present specification **describes the claimed invention (including a processor and a memory) in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention.** The original specification describes an "On-line Advertising System and Method" through a "wired or wireless communication network." Para. [0022]. Applicant submits that the original specification inherently discloses the processor and memory to implement the present online system and method through a wired or wireless communication network.

FIG. 2



For example, in reference to Fig. 2 and para. [0030] of the present application, the claimed advertising system 200 provides a web server 210 with advertisement data related to content provided through a web page and the web server 210 provides a user terminal with the web page through a network connection. The patent law allows newly added claim limitations to "be supported in the specification **through express, implicit, or inherent disclosure.**" See MPEP §2163.

One of ordinary skill in the art would certainly know that such an online system and method must be carried out with electronic devices which contain memories and at least a processor, and therefore such components are inherently taught in a system disclosing teachings related to such a system and method. As such, one skilled in the art can reasonably conclude from the original specification that the inventor had possession of the claimed invention. Therefore, Applicant submits that claims 1 and 12 comply with 35 U.S.C. § 112, first paragraph and are supported by the specification. As Examiner knows, the limitation of "a server which includes a processor and

a memory" was added to overcome 101 rejections for non-statutory subject matter, not to change the scope of claims.

(3) After Federal Circuit's decisions in *In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008), the patentable subject matter issues have been unclear. Although Examiner interpreted claims 1 and 12 to be directed to "pure software," the Federal Circuit in quite a few cases has regarded such computing system claim without recitation of a processor or a memory as a machine prior to the Bilski case. While the Federal Circuit appears to change the patentable subject matter jurisprudence, it has not changed how one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention. The Supreme Court, acknowledging problems of Bilski decision, has recently decided to review the Bilski case. Applicant, following the Examiner's suggestions at the interview, added such limitations of "a processor and a memory" only to meet the statutory subject matter. Now, Examiner asserts that the terms "a processor" and "a memory" are not included in the original specification. However, the fact that such an online system and method must be carried out with electronic devices which contain memories and at least a processor is inherent. If Examiner believes that either Section 101 statutory subject matter issue or Section 112 written description issue is not resolved, Applicant' Attorneys would be ready for resolving this issue on the phone before Examiner issues additional Office Action.

(4) Claim 1 is also rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter because Applicant previously added a method step to the system claim. In accordance with the Examiner's suggestions, Applicant respectfully removes the method step.

## B. Claim Rejection under 35 U.S.C. § 103(a)

### THE RELEVANT LAW

**Obviousness** - A finding of obviousness must be based on four underlying factual determinations:

- (1) The scope and content of the prior art;
- (2) The differences between the prior art and the claimed invention;
- (3) The level of ordinary skill in the art; and
- (4) Objective considerations of non-obviousness such as commercial success, long felt but unmet need, failure of others to make the invention, and the like. See, *Graham v. John Deere Co.*, 148 U.S.P.Q. 459 (1966). Failure to make these determinations precludes the

making of a prima facie case of obviousness.

(1) The Federal Circuit following the Supreme Court's decision in *KSR Intern. Co. v. Teleflex Inc.*, 550 U.S. 398, 127 S.Ct. 1727 held that "[An] impermissible "obvious to try" situations occurs where what was 'obvious to try' was to explore a new technology or general approach that seemed to be a promising field of experimentation, where the prior art gave only general guidance as to the particular form of the claimed invention or how to achieve it. ... *KSR* affirmed the logical inverse of this statement by stating that § 103 bars patentability unless "the improvement is more than the predictable use of prior art elements according to their established functions." *In re Kubin*, 2009 WL 877646, 8 (Fed. Cir. 2009). The Federal Circuit also following the Supreme Court's decision in *KSR* held that "the test for obviousness is not whether or not it would have been obvious to try to make the invention, but rather whether or not the inconvenience [sic] would have been obvious to a person of ordinary skill in the inventor's field at the time the invention was made." *Rentrop v. Spectranetics Corp.*, 550 F.3d 1112, 1118 (Fed. Cir. 2008). In other words, **the test for obviousness is whether a person skilled in the art would have solved a known problem by obvious methods, not whether it would be obvious to try to solve the problem that the invention solves.**

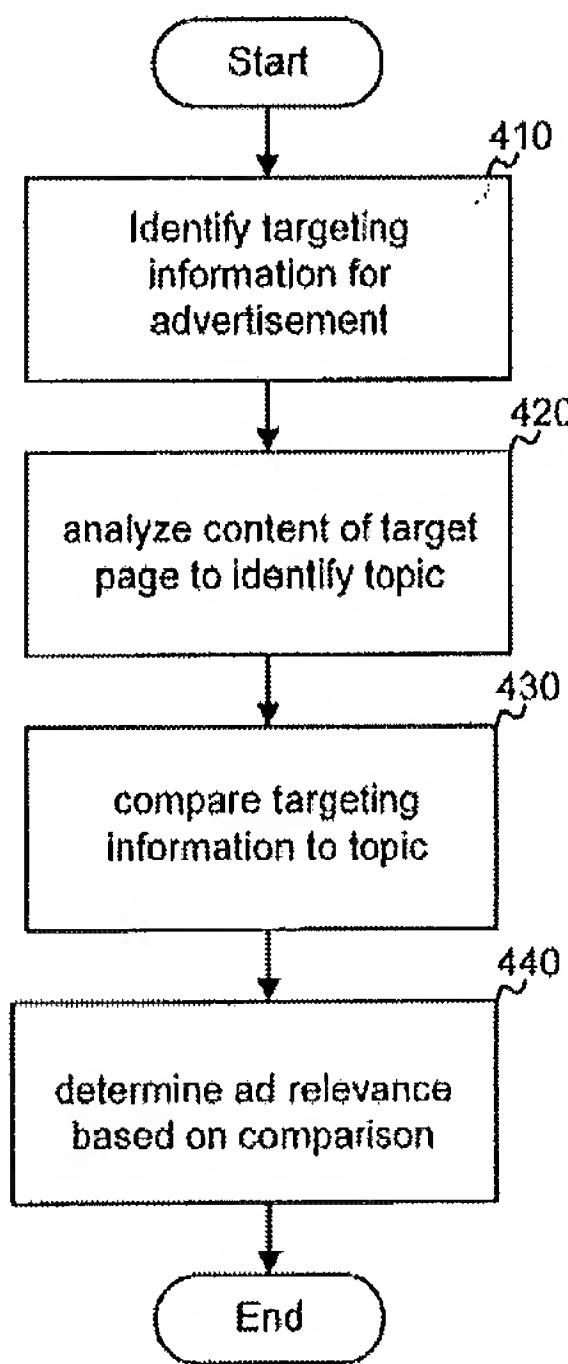
(2) The Office Action states that claims 1-16 and 18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Pub. No. 2004/0059708 issued to Dean et al. (hereinafter "Dean") in view of U.S. Patent No. 6,778,975 issued to Anick et al. (hereinafter "Anick").

**Claims 1, 12 and 19:**

(3) The present invention is directed to contextual advertising. The contextual advertising is a form of targeted advertising for advertisements appearing on webpages. A contextual advertising system generally scans the text of a website for keywords and returns advertisements to the webpage based on what the user is viewing. Independent claims 1, 12 and 19 are directed to a method and system which use a predetermined categories and relevant keywords as well as specific keywords received from an advertiser to determine proper advertising. The claimed invention as amended herein provides distinctive method of analyzing the contextual advertising document. Particularly, the claimed invention (1) assigns a target document a category for classifying directory-based document; (2) expands keywords received from an advertiser by using similar keywords and expansion keywords recited in claims 1, 12 and 19; and (3) selects

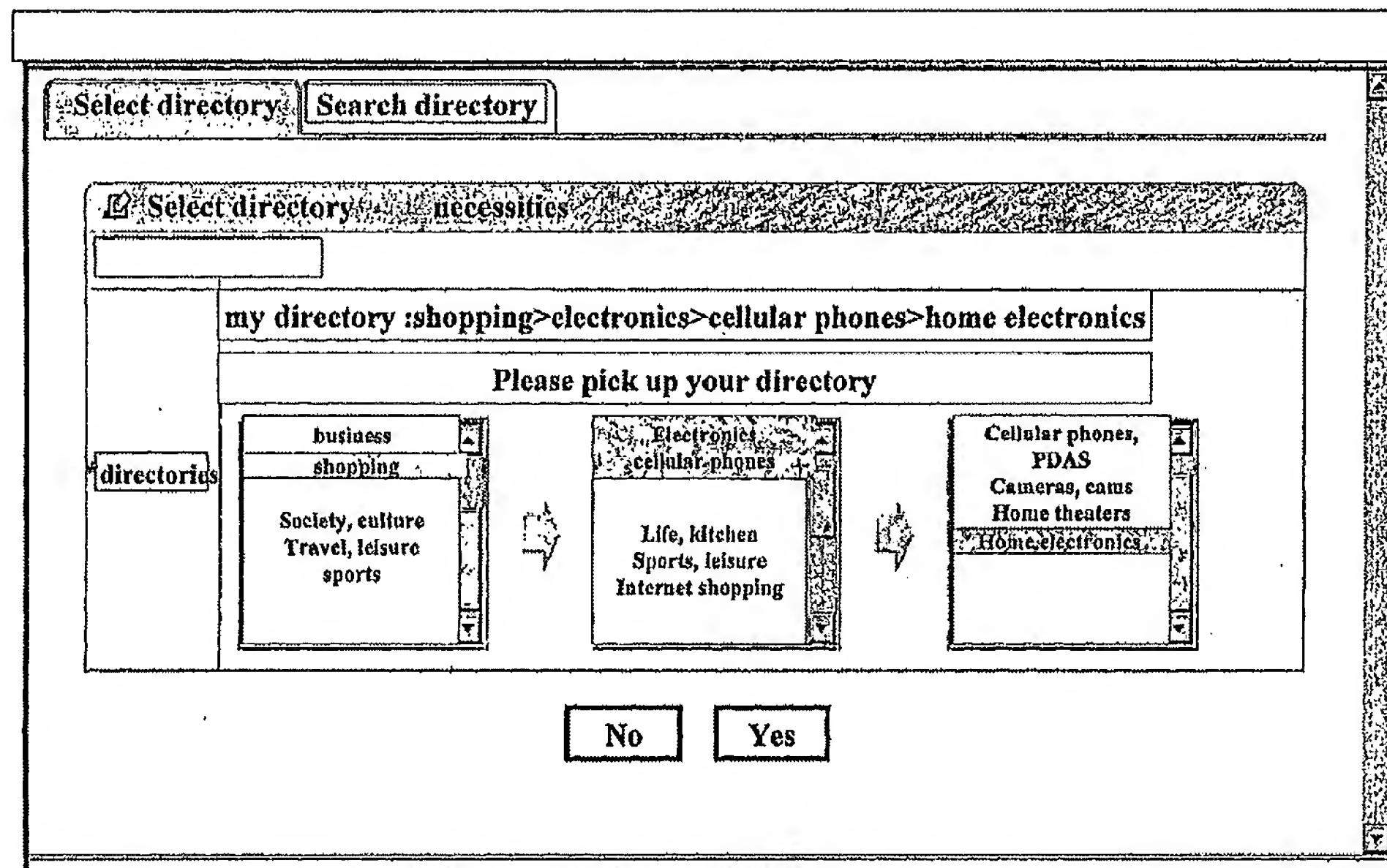
advertisement data based on the exposure point. Claims 1, 12 and 19 further specify detailed method of computing the exposure point, which inspects at least one selected from a group consisting of a number of the searched keywords, similar keywords and expansion keywords in the on-line content, positions of the searched keywords, similar keywords and expansion keywords on the on-line content and a font style of the searched keywords, similar keywords and expansion keywords; and computes the exposure points for the search advertisement data based on results of said inspection for the searched keywords, similar keywords and expansion keywords, respectively.

(4) In reference to Fig. 4 of Dean, reproduced for the Examiner's convenience, and para. [0043] - para. [0048], Dean is also directed to a method and system of providing contextual advertising. However, Dean discloses a method of identifying targeting information for an advertisement (410), analyzing the content of a target document to identify a list of one or more topics for the target document (420), comparing the targeting information to the list of topics to determine if a match exists (430), and determining that the advertisement is relevant to the target (440).



(5) The claimed invention maintains a predetermined category associated with on-line content and advertising content for determining relevance based on the category as well as evaluation of keywords. The content category classifies the target document into a category according to relevant advertising. However, Dean does not teach a method of analyzing the target document

based on the category of the target document. Dean only discloses comparing target information received from an advertiser to a topic of the target document. However, Examiner stated that he "is forced to interpret Applicant's 'determining content category' limitation to be the same as the 'topic determining' feature of Dean" because both content category and topic could be determined by using at least the text of the document and a predetermined algorithm. Applicant respectfully traverses Examiner's interpretation of the terms "category" and "topic". Claims must be read in view of the specification, of which they are a part. It is also well-settled law that dictionaries, encyclopedias and treatises are useful resources in assisting the court to determine the ordinary and customary meanings of claim terms. *Texas Digital Systems, Inc.*, 3308 F.3d 1193 (Fed. Cir. 2002). Applicant previously pointed out that in English usage, the ordinary meaning of the term CATEGORY is different from the ordinary meaning of the term TOPIC. According to the dictionary definition, the term TOPIC means "**the subject** of a discourse or of a section of a disclosure." Merriam-Webster's Collegiate Dictionary, Eleventh Edition, (Merriam-Webster, Incorporated 2004). See Exhibit A. On the other hand, the term CATEGORY means "any of several fundamental and **distinct classes** to which entities or concepts belong" or "**a classificatory division** in any field of knowledge" Merriam-Webster's Collegiate Dictionary, Eleventh Edition, (Merriam-Webster, Incorporated 2004). See Exhibit A. Such meaning of the term CATEGORY is also supported by the present specification. For example, in reference to Fig. 12 of the present application, the present application provides an interface enabling the advertiser to select a category by a directory searching method.



Examiner asserts that since both the recited "predetermined category associated with on-line content" and the topic of the target document disclosed in Dean can be determined based on keywords from the text of the target document, both terms have the same meaning. However, Applicant respectfully submits that Examiner overlooks dictionary definition as well as ordinary meaning of the terms. According to the present application and the dictionary definition of the term CATEGORY, the target documents should be **classified**. If Examiner believes the present specification changes the ordinary meaning of the term CATEGORY, it should be pointed out. If Examiner believes Dean discloses the term TOPIC which has different meaning from its ordinary meaning, it should be pointed out as well. Otherwise, it is presumed that these terms have their ordinary meanings (i.e. dictionary definition). According to the ordinary meanings of these terms, Dean does not teach the recited limitation of "predetermined category associated with on-line content" because Dean does not disclose classifying the target documents according to predetermined categories.

(6) The claimed invention expands the target keywords received from advertisers by using similar keywords and expansion keywords. Claim 1, 12 and 19 further specifies that the similar keyword is a keyword having a similar meaning to the meaning of said keyword and the expansion keyword represents an upper concept or a lower concept of the keyword. Whereas, Dean does not disclose expansion of target keywords. Examiner indicated that database 240 of

Dean teaches the claimed limitations. To the contrary, Dean uses a list of target keywords "as provided by advertiser 110 through ad campaign entry and management component 210. While Dean discloses a method of extracting target keywords from the content of the advertisement, it does not disclose expansion of the target keywords received from the advertiser.

(7) Claims 1, 12 and 19 recite detailed method and system of computing exposure points and of selecting proper advertisement based on the computed exposure points. As noted by Examiner, Dean simply selects proper advertisement based on frequency of targeted term(s) that is received from the advertiser. Whereas, the claimed invention inspects at least one selected from a group consisting of a number of the searched keywords, similar keywords and expansion keywords in the on-line content, positions of the searched keywords, similar keywords and expansion keywords on the on-line content and a font style of the searched keywords, similar keywords and expansion keywords; and computes the exposure points for the search advertisement data based on results of said inspection for the searched keywords, similar keywords and expansion keywords, respectively. Determination of relevance based on frequency of targeted terms appeared in the target document is distinctively different from the claimed determination of relevance based on the exposure points computed in the recited way. This methodological difference alone serves to distinguish claims 1, 12 and 19 as amended from the Dean reference.

(8) In light of foregoing, it is submitted that Dean fails to disclose limitations recited in claims 1, 12 and 19 of the present application and Anick still fails to remedy the deficiencies of Dean in teaching all the elements and limitations of claims 1, 12 and 19. Neither Dean nor Anick nor their combination disclose or teach all the elements and limitations of claims 1, 12 and 19. Therefore, claims 1, 12 and 19 are now in condition for allowance.

(9) As to claims 6-11, the Examiner rejected claims 6-11 which depend from claim 1 as being unpatentable over Dean in view of Anick. Thus, the above remarks for claim 1 are equally applicable to the dependent claims 6-11. As such, claims 6-11 are clearly allowable over the cited prior art.

(10) As to claims 13 and 14, the Examiner rejected claims 13 and 14 which depend from claim 12 as being unpatentable over Dean in view of Anick. Thus, the above remarks for claim 12 are equally applicable to the dependent claims 13 and 14. Claim 13 further specifies maintaining the advertisement database. Claim 13 recites the steps of receiving selection of a category for

the advertisement data from the advertiser; and storing the received keyword and the category in association with the advertisement database. It is clear that Dean does not disclose the steps of receiving **selection of a category** for the advertisement data from the advertiser and storing the **received category**. The Ad entry and management component 210 disclosed in Dean allows an advertiser to enter (1) one or more ads, (2) one or more set of keywords or topics associated with those ads, (3) geographic targeting information, (4) a value indication for the advertisement, (5) start date, end date, etc. As such, claims 6-11 are clearly allowable over the cited prior art.

As only dependent claims were rejected under 35 U.S.C. §103, these rejections are moot in view of the amendments to Independent claims 1, 12 and 18. Therefore, Applicant respectfully submits that Independent Claims 1, 12 and 18, as well as all of the claims which depend therefrom, are free from Dean and are allowable.

Respectfully submitted,

Date: August 27, 2009



Changhoon Lee  
Reg. No. L0316  
Husch Blackwell Sanders LLP  
190 Carondelet Plaza, Suite 600  
Clayton, MO 63105  
(314) 480-1500  
ATTORNEYS FOR APPLICANT

AMERICA'S BEST-SELLING DICTIONARY

Merriam-  
Webster's  
**Collegiate®**  
Dictionary

Eleventh Edition

®

New Ways to Find  
the Words You Need Today

AN ENCYCLOPÆDIA BRITANNICA® COMPANY



### A GENUINE MERRIAM-WEBSTER

The name *Webster* alone is no guarantee of excellence. It is used by a number of publishers and may serve mainly to mislead an unwary buyer.

*Merriam-Webster™* is the name you should look for when you consider the purchase of dictionaries or other fine reference books. It carries the reputation of a company that has been publishing since 1831 and is your assurance of quality and authority.

Copyright © 2004 by Merriam-Webster, Incorporated

#### Library of Congress Cataloging in Publication Data

Merriam-Webster's collegiate dictionary. — Eleventh ed.

p. cm.

Includes index.

ISBN 0-87779-807-9 (Laminated unindexed : alk. paper). — ISBN 0-87779-808-7 (Jacketed hardcover unindexed : alk. paper). — ISBN 0-87779-809-5 (Jacketed hardcover with CD-ROM : alk. paper). — ISBN 0-87779-810-9 (Leatherlook with CD-ROM : alk. paper). — 0-87779-813-3 (Canadian). — 0-87779-814-1 (international).

1. English language—Dictionaries. I. Title: Collegiate dictionary. II. Merriam-Webster, Inc.

PE1628.M36 2003

423—dc21

2003003674

CIP

Merriam-Webster's Collegiate® Dictionary, Eleventh Edition, principal copyright 2003

COLLEGIATE is a registered trademark of Merriam-Webster, Incorporated

All rights reserved. No part of this book covered by the copyrights hereon may be reproduced or copied in any form or by any means—graphic, electronic, or mechanical, including photocopying, taping, or information storage and retrieval systems—without written permission of the publisher.

Made in the United States of America

3456TT:QWV04

**catechil** \'ka-tə-,kin\ *n* [ISV *catechu* + <sup>1</sup>-*in*] (1853) : a crystalline flavonoid compound C<sub>15</sub>H<sub>14</sub>O<sub>6</sub> or its derivatives having antioxidant properties and used in dyeing and tanning

**catechism** \'ka-tə-,ki-zəm\ *n* (1502) 1 : oral instruction 2 : a manual for catechizing; *specif* : a summary of religious doctrine often in the form of questions and answers 3 a : a set of formal questions put as a test b : something resembling a catechism esp. in being a rote response or formulaic statement — **catechismal** \,ka-tə-'kiz-məl\ *adj*

**catechist** \'ka-tə-kist\ *n* (ca. 1563) : one that catechizes: as a teacher of catechumens b : a native in a missionary district who does Christian teaching

**catechize** \'ka-tə-,kīz\ *vt* -chized; -chiz·ing [LL *catechizare*, fr. Gk *katechein* to teach, lit., to din into, fr. *kata-* cata- + *ēchein* to resound, fr. *ēchē* sound — more at ECHO] (15c) 1 : to instruct systematically esp. by questions, answers, and explanations and corrections; *specif* : to give religious instruction in such a manner 2 : to question systematically or searchingly — **catechization** \,ka-ti-kə-'zā-shən\ *n* — **catechizer** \'ka-tə-,kī-zər\ *n*

**catechol** \'ka-tə-,kōl, -kōl\ *n* (1880) 1 : CATECHIN 2 : a crystalline phenol C<sub>6</sub>H<sub>6</sub>O<sub>2</sub> obtained from various natural sources but usu. made synthetically and used esp. in organic synthesis

**catecholamine** \,ka-tə-'kō-lə-,mēn, -'kō-\ *n* (1954) : any of various amines (as epinephrine, norepinephrine, and dopamine) that function as hormones or neurotransmitters or both

**catecholaminergic** \,-kō-lə-mē-'nər-jik, -'kō-, -mi-\ *adj* (1970) : involving, liberating, or mediated by catecholamine

**catechu** \'ka-tə-,chü, -shü\ *n* [prob. modif. of Malay *kachu*, of Dravidian origin; akin to Tamil & Kannada *kācu* *catechu*] (1683) : any of several dry, earthy, or resinous astringent substances obtained from tropical plants of Asia: as a : an extract of the heartwood of an East Indian acacia (*Acacia catechu*) b : GAMBIER

**catechumen** \,ka-tə-'kyū-mən\ *n* [ME *cathecumyn*, fr. LL *catechumenus*, fr. Gk *katechoumenos*, pres. pass. part. of *katechein*] (15c) 1 : a convert to Christianity receiving training in doctrine and discipline before baptism 2 : one receiving instruction in the basic doctrines of Christianity before admission to communicant membership in a church

**category** \,ka-tə-'gor-ē\ *n* (1588) 1 : ABSOLUTE, UNQUALIFIED <a ~ denial> 2 a : of, relating to, or constituting a category b : involving, according with, or considered with respect to specific categories — **category** \,-i-k(ə-)lē\ *adv*

**categorical imperative** *n* (1827) : a moral obligation or command that is unconditionally and universally binding

**categorize** *Brit var of CATEGORIZE*

**categorize** \'ka-ti-gə-,rīz\ *vt* -rized; -riz·ing (1705) : to put into a category: CLASSIFY — **categorization** \,ka-ti-gə-rə-'zā-shən\ *n*

**category** \'ka-tə-,gōr-ē\ *n*, pl -ries [LL *categorīa*, fr. Gk *katēgorīa* predication, category, fr. *katēgorein* to accuse, affirm, predicate, fr. *kata-* + *agora* public assembly, fr. *ageirein* to gather] (1588) 1 : any of several fundamental and distinct classes to which entities or concepts belong 2 : a division within a system of classification

**catena** \kə-'tē-nə\ *n*, pl -nae \-(.)nē\ or -nas [ML, fr. L, chain] (1641) : a connected series of related things

**catenary** \'ka-tə-,ner-ē, -,ne-rē, esp Brit kə-'tē-nə-rē\ *n*, pl -nar·ies [NL *catenaria*, fr. L, fem. of *catenarius* of a chain, fr. *catena*] (1788) 1 : the curve assumed by a cord of uniform density and cross section that is perfectly flexible but not capable of being stretched and that hangs freely from two fixed points 2 : something in the form of a catenary — **catenary** *adj*

**catenate** \'ka-tə-,nāt\ *vt* -nat·ed; -nat·ing [L *catenatus*, pp. of *catenare*, fr. *catena*] (ca. 1623) : to connect in a series: LINK — **catenation** \,ka-tə-'nā-shən\ *n*

**cater** \'kā-tər\ *vb* [obs. *cater* buyer of provisions, fr. ME *cator*, short for *acatour*, fr. AF, fr. *acater* to buy — more at CATE] *vi* (1580) 1 : to provide a supply of food 2 : to supply what is required or desired <~ing to middle-class tastes> ~ *vt* : to provide food and service for <~ed the banquet> — **caterer** \,-tər-ər\ *n*

**caterer** \'kā-tə-rən\ *n* [ME (Sc) *keitharan*, prob. fr. ML *katheranus*, fr. ScGael *ceithearn* band of fighting men] (14c) : a former military irregular or brigand of the Scottish Highlands

**catercorner or catercornered** *var of KITTY-CORNER*

**catercousin** \'kā-tər-,kə-zən\ *n* [perh. fr. obs. *cater* buyer of provisions] (1519) : an intimate friend

**caterpillar** \'kā-tə(r)-pi-lər\ *n*, often attrib [ME *catyrpel*, fr. AF \**catepelose*, lit., hairy cat] (15c) : the elongated wormlike larva of a butterfly or moth; also : any of various similar larvae

**Caterpillar** trademark — used for a tractor made for use on rough or soft ground and moved on two endless metal belts

**caterwaul** \'ka-tər-,wōl\ *vi* [ME *caterwaven*] (14c) 1 : to make a harsh cry 2 : to protest or complain noisily — **caterwaul** *n*

**cat-facing** \'kat-,fā-sin\ *n* (1940) : a disfigurement or malformation of fruit suggesting a cat's face in appearance

**cat-fight** \,-fit\ *n* (1919) : an intense fight or argument esp. between two women

**catfish** \,-fish\ *n* (1612) : any of an order (Siluriformes) of chiefly freshwater stout-bodied scaleless bony fishes having long tactile barbels

**cat-gut** \,-gət\ *n* (1599) : a tough cord made usu. from sheep intestines

**cath abbr** 1 cathedral 2 catheter; catheterization 3 cathode

**cath-** — see CATA-

**Cathar** \'ka-,thär\ *n*, pl **Cath·a·ri** \'ka-thə-,rī, -rē\ or **Cathars** [LL *cathari* (pl.), fr. LGk *katharoi*, fr. Gk, pl. of *katharos* pure] (1634) : a member of one of various ascetic and dualistic Christian sects esp. of the later Middle Ages teaching that matter is evil and professing faith in an angelic Christ who did not really undergo human birth or death — **Cath·a·rism** \'ka-thə-,rī-zəm\ *n* — **Cath·a·rist** \,-rist\ or **Cath·a·rls·tic** \,ka-thə-'ris-tik\ *adj*

**catharsis** \kə-'thär-səs\ *n*, pl **ca·thar·ses** \,-sēz\ [NL, fr. Gk *katharsis*, fr. *kathairein* to cleanse, purge, fr. *katharos*] (ca. 1775) 1 : PURGATION 2 a : purification or purgation of the emotions (as pity and fear) primarily through writing

about spiritual renewal or release from tension 3 : elimination of a complex by bringing it to consciousness and affording it expression

<sup>1</sup>**ca-thar-tic** \kə-'thär-tik\ adj [LL or Gk; LL *catharticus*, fr. Gk *kathartikos*, fr. *kathairein*] (1612) : of, relating to, or producing catharsis <~ drugs> <a ~ experience> — **ca-thar-tic-al-ly** \-ti-k(ə-)lē\ adv

<sup>2</sup>**cathartic** n (1651) : a cathartic medicine : PURGATIVE

**cat-head** \'kat-hed\ n (1626) : a projecting piece of timber or iron near the bow of a ship to which the anchor is hoisted and secured

**ca-thect** \kə-'thekt, ka-\ vt [back-formation fr. *cathetic*] (1925) : to invest with mental or emotional energy

**ca-thec-tic** \kə-'thek-tik, ka-\ adj [NL *cathexis*] (1927) : of, relating to, or invested with mental or emotional energy

**ca-the-dra** \kə-'thē-drə\ n [L, chair — more at CHAIR] (ca. 1797) : a bishop's official throne

<sup>1</sup>**ca-the-dral** \kə-'thē-drəl\ adj (14c) 1 : of, relating to, or containing a cathedra 2 : emanating from a chair of authority 3 : suggestive of a cathedral <a ~ grove of redwoods>

<sup>2</sup>**cathedral** n (1587) 1 : a church that is the official seat of a diocesan bishop 2 : something that resembles or suggests a cathedral (as in size or importance) <a ~ of business> <the sports ~>

**ca-thep-sin** \kə-'thep-sən\ n [Gk *kathepsin* to digest (fr. *kata-* cata- + *hepsin* to boil) + E <sup>2</sup>-in] (1929) : any of several intracellular proteases of animal tissue that aid in autolysis

**Cath-er-ine wheel** \'ka-th(ə)-rin-\ n [St. Catherine of Alexandria tab307 Christian martyr] (1584) 1 : a wheel with spikes projecting from the rim 2 : PINWHEEL 1 3 : CARTWHEEL 2

**cath-e-ter** \'ka-thə-tər, 'kath-tər\ n [LL, fr. Gk *katether*, fr. *kathienai* to send down, fr. *kata-* cata- + *hienai* to send — more at JET] (1601) : a tubular medical device for insertion into canals, vessels, passageways, or body cavities usu. to permit injection or withdrawal of fluids or to keep a passage open — compare BALLOON CATHETER

**cath-e-ter-i-za-tion** \,ka-thə-tə-rə-'zā-shən, ,kath-tə-rə-\ n (ca. 1852) : the use of or introduction of a catheter (as in or into the bladder, trachea, or heart) — **cath-e-ter-i-ze** \'ka-thə-tə-,rīz, 'kath-tə-\ vt

**ca-thex-is** \kə-'thek-səs, ka-\ n, pl **ca-thex-es** \-,sēz\ [NL (intended as trans. of G *Besetzung*), fr. Gk *kathexis* holding, fr. *katechein* to hold fast, occupy, fr. *kata-* + *echein* to have, hold — more at SCHEME] (1922) : investment of mental or emotional energy in a person, object, or idea

**cath-ode** \'ka-,thōd\ n [Gk *kathodos* way down, fr. *kata-* + *hodos* way] (1834) 1 : the electrode of an electrochemical cell at which reduction occurs: a : the negative terminal of an electrolytic cell b : the positive terminal of a galvanic cell 2 : the electron-emitting electrode of an electron tube; broadly : the negative electrode of a diode — compare ANODE — **cath-od-al** \'ka-,thō-dəl\ adj — **cath-od-al-ly** adv — **ca-thod-ic** \ka-'thä-dik, -'thō-\ adj — **ca-thod-i-cal-ly** \-di-k(ə-)lē\ adv

**cathode ray** n (1880) 1 pl : the high-speed electrons emitted in a stream from the heated cathode of a vacuum tube 2 : a stream of electrons emitted from the cathode of a vacuum tube — usu. used in pl.

**cathode-ray tube** n (1905) : a vacuum tube in which a beam of electrons is projected on a phosphor-coated screen to produce a luminous spot at a point on the screen determined by the effect on the electron beam of a variable magnetic field within the tube

**cathodic protection** n (1930) : the prevention of electrolytic corrosion of a usu. metallic structure (as a pipeline) by causing it to act as the cathode rather than as the anode of an electrochemical cell

**cath-o-lic** \'kath-lik, 'ka-thə-\ adj [ME *catholik*, fr. MF & LL; MF *catholique*, fr. LL *catholicus*, fr. Gk *katholikos* universal, general, fr. *katholou* in general, fr. *kata* by + *holos* whole — more at CATA-, SAFE] (14c) 1 a often *cap* : of, relating to, or forming the church universal b often *cap* : of, relating to, or forming the ancient undivided Christian church or a church claiming historical continuity from it c *cap* : ROMAN CATHOLIC 2 : COMPREHENSIVE, UNIVERSAL; esp : broad in sympathies, tastes, or interests <a ~ taste in music> — **ca-thol-i-cal-ly** \kə-'thä-li-k(ə-)lē\ adv — **ca-thol-i-cize** \'-thä-lə-,sīz\ vb

**Cath-o-lic** \'kath-lik, 'ka-thə-\ n (15c) 1 : a person who belongs to the universal Christian church 2 : a member of a Catholic church; esp : ROMAN CATHOLIC

**Catholic Apostolic** adj (1888) : of or relating to a Christian sect founded in 19th century England in anticipation of Christ's second coming

**ca-thol-i-cate** \ka-'thō-lə-,kāt, -kət\ n (1850) : the jurisdiction of a *catholico*

**Catholic Epistles** n pl (1582) : the five New Testament letters including James, I and II Peter, I John, and Jude addressed to the early Christian churches at large

**Ca-thol-i-cism** \kə-'thä-lə-,si-zəm\ n (ca. 1617) 1 : ROMAN CATHOLICISM 2 : the faith, practice, or system of Catholic Christianity

**cath-o-lic-i-ty** \,ka-thə-'li-sə-tē, ,kath-'li-\ n, pl -ties (1704) 1 *cap* : the character of being in conformity with a Catholic church 2 a : liberality of sentiments or views <~ of viewpoint — W. V. O'Connor> b : UNIVERSALITY c : comprehensive range <~ of topics>

**ca-thol-i-con** \ka-'thä-lə-,kän\ n [ME, fr. ML, fr. Gk *katholikon*, neut. of *katholikos*] (15c) : CURE-ALL, PANACEA

**ca-thol-i-cos** \kə-'thō-li-kōs\ n, pl -i-cos-es \-kō-sēz\ or -i-col \-,kōl\ often *cap* [LGk *katholikos*, fr. Gk, general] (1878) : a primate of certain Eastern churches and esp. of the Armenian or of the Nestorian church

\ə\ abut \ə\ kitten, F table \ər\ further \a\ ash \ā\ ace \ä\ mop, mar  
|au\| out \ch\ chin \e\ bet \ē\ easy \g\ go \i\ hit \i\ ice \j\ job  
|y\ sing \ō\ go \ō\ law \oi\ boy \th\ thin \th\ the \ü\ loot \ü\ foot  
|y\ yet \zh\ vision, beige \k, n, ŋ, ſ, ʃ\ see Guide to Pronunciation

- over the top** : beyond the bounds of what is expected, usual, normal, or appropriate
- 2 top vb topped; top·ping vt** (1509) 1 : to remove or cut the top of; esp. to shorten or remove the top of (a plant) : PINCH 1b 2 a : to cover with a top or on the top : provide, form, or serve as a top for b : to supply with a decorative or protective finish or final touch c : to resupply or refill to capacity — usu. used with off *<topped off the tank>* d : to complete the basic structure of (as a high-rise building) by putting on a cap or uppermost section — usu. used with out or off e : to bring to an end or climax — usu. used with off *<the event was topped off with a relay race —Paula Rodenas>* 3 a : to be or become higher than : OVERTOP *<~s the previous record>* b : to be superior to : EXCEL, SURPASS c : to gain ascendancy over : DOMINATE 4 a : to rise to, reach, or be at the top of b : to go over the top of : CLEAR, SURMOUNT 5 : to strike (a ball) above the center thereby imparting topspin ~ vi 1 : to make an end, finish, or conclusion 2 : to reach a summit or crest — usu. used with off or out
- 3 top adj** (1556) 1 : of, relating to, or being at the top : UPPERMOST 2 : CHIEF, LEADING *<one of the world's ~ journalists>* 3 : of the highest quality, amount, or degree *<~ value> <~ form>*
- 4 top n** [ME, fr. OE] (14c) : a commonly cylindrical or conoidal device that has a tapering point on which it is made to spin and that is used esp. as a toy
- top- or topo-** comb form [Gk, fr. *topos*] 1 : place : locality *<topology>* *<toponymy>* 2 : topology *<topoisomerase>*
- to·paz \tō-pāz\ n** [ME *topaze*, fr. AF, fr. L *topazus*, fr. Gk *topazos*] (13c) 1 a : a mineral that is essentially a silicate of aluminum and usu. occurs in orthorhombic translucent or transparent crystals or in white translucent masses b : a usu. yellow to brownish-yellow transparent mineral topaz used as a gem c : a yellow sapphire d : a yellow quartz 2 : either of two large brilliantly colored So. American hummingbirds (*Topaza pella* and *T. pyra*)
- top banana n** [fr. a burlesque routine involving three comedians in which the one that gets the punch line also gets a banana] (1952) : the leading comedian in a burlesque show; broadly : KINGPIN
- top billing n** (1945) 1 : prominent emphasis, featuring, or advertising 2 : the position at the top of a theatrical bill usu. featuring the star's name
- top boot n** (1768) : a high boot often with light-colored leather bands around the upper part
- top·coat \tāp-kōt\ n** (1804) 1 : a lightweight overcoat 2 : OVERCOAT 2
- top·cross \tāp-kros\ n** (1890) : a cross between a superior or purebred male and inferior female stock to improve the average quality of the progeny; also : the product of such a cross
- top dog n** (1900) : a person, group, or thing in a position of authority esp. through victory in a hard-fought competition
- top dollar n** (1970) : the highest amount being paid for a commodity or service *<willing to pay top dollar to get them —Dean Falley>*
- top-down \tāp-dān\ adj** [fr. the phrase *from the top down*] (1941) 1 : controlled, directed, or constituted from the top level *<a ~ corporate structure>* 2 : proceeding by breaking large general aspects (as of a problem) into smaller more detailed constituents : working from the general to the specific *<~ programming> <~ design>*
- top drawer n** (1905) : the highest level of society, authority, or excellence — **top-drawer \tāp-dār\ adj**
- top-dress \tāp-dres\ vt** (1733) : to apply material to (as land or a road) without working it in; esp. to scatter fertilizer over (land)
- top·dress·ing \tāp-dres-ing\ n** (1744) : a material used to top-dress soil
- 1 tope \tōp\ vt** **toped; top·ing** [obs. E *tope*, interj. used to wish good health before drinking] (1664) : to drink liquor to excess
- 2 tope n** [origin unknown] (1686) : a small slender cosmopolitan shark (*Galeorhinus galeus*) valued for its flesh, fins, and oil-rich liver
- 3 topee n** [perh. fr. Punjabi *top* hat] (1815) : STUPA
- to·pee or to·pi \tō-pe, tō-(,)pe\ n** [Hindi & Urdu *topi*] (1835) : a light-weight helmet-shaped hat made of pith or cork
- top-end \tāp-end\ adj** (1954) : TOPFLIGHT *<~ equipment>*
- top·er \tō-pər\ n** (1661) : one that topes; esp. : DRUNKARD
- top·flight \tāp-flīt\ adj** (1931) : of, relating to, or being the highest level of achievement, excellence, or eminence — **top flight n**
- 1 Top 40 n pl** (1965) : the forty best-selling audio recordings for a given period
- 2 top 40 adj** (1965) : constituting, playing, listing, or relating to the Top 40 *<Top 40 hits> <Top 40 stations> <Top 40 charts>*
- top·ful or top·full \tāp-fūl\ adj** (1553) : BRIMFUL
- 1 top·gal·lant \tāp-gal-lānt, tō-ga-\ adj** [*top + gallant*] (1514) : of, relating to, or being a part next above the topmast and below the royal mast *<~ sails> <the ~ mast>*
- 2 topgallant n** (1581) 1 *archaic* : the topmost point : SUMMIT *<the high ~ of my joy —Shak.>* 2 : a topgallant mast or sail
- top gun n** (1974) : one who is at the top (as in ability, rank, or prestige)
- top-ham·per \tāp-ham-pər\ n** (1791) 1 : matter or weight (as spars or rigging) in the upper part of a ship 2 : unnecessary cumbersome matter
- top hat n** (1879) : a tall-crowned hat usu. of beaver or silk
- top-heavy \tāp-he-vē\ adj** (ca. 1533) 1 : having the top part too heavy for the lower part 2 : having too high proportion of administrators *<a ~ bureaucracy>* 3 : oversupplied with one element at the expense of others : lacking balance *<a novel ~ with description>*
- To-phet \tō-fēt\ n** [ME, shrine south of ancient Jerusalem where human sacrifices were performed to Moloch in Jer 7:31, Gehenna, fr. LL *Topeth*, fr. Heb *tōphēth*] (14c) : HELL, GEHENNA
- top-hole \tāp-hōl\ adj** (1908) *chiefly Brit.* : EXCELLENT, FIRST-CLASS
- to·phus \tō-füs\ n, pl to·phi \tō-fī, -fē\** [L, tufa] (1607) : a deposit of urates in tissues (as cartilage) that is characteristic of gout
- to·pi \tō-pē\ n, pl to·pi or to·pols** [perh. fr. Swahili] (1894) : a sub-Saharan antelope (*Damaliscus lunatus* syn. *D. korrigum*) having a glossy usu. reddish-brown coat with purplish-black and yellowish markings
- 1 to·pi·ary \tō-pē-er-ē\ adj** [L *toparius*, fr. *topia* ornamental gardening, irreg. fr. Gk *topos* place] (1592) : of, relating to, or being the practice or art of training, cutting, and trimming trees or shrubs into odd or ornamental shapes; also : characterized by such work
- 2 topiary n, pl -ar·ies** (1904) 1 : topiary art or gardening; also : a topiary garden 2 a : a plant shaped by topiary art b : topiary plants
- top·ic \tā-pik\ n** [L *Topica* Topics (work by Aristotle), fr. Gk *Topika*, neut. pl. of *topikos* of a place, of a topos, fr. *topos* place, topos] (ca. 1569) 1 a : one of the general forms of argument employed in probable reasoning b : ARGUMENT, REASON 2 a : a heading in an outlined argument or exposition b : the subject of a discourse or of a section of a discourse
- top·i·cal \tā-pi-kəl\ adj** (ca. 1525) 1 a : of, relating to, or arranged by topics *<set down in ~ form>* b : referring to the topics of the day or place : of local or temporary interest *<a ~ novel> <~ references>* 2 : designed for or involving local application and action (as on the body) *<a ~ anesthetic> <a ~ remedy>* — **top·i·cal·ly \tā-pi-kəlē\ adv**
- top·i·cal·i·ty \tā-pi-kə-tētē\ n, pl -ties** (1904) 1 : the quality or state of being topical 2 : an item of topical interest
- topic sentence n** (1885) : a sentence that states the main thought of a paragraph or of a larger unit of discourse and is usu. placed at or near the beginning
- top·kick \tāp-kik\ n** (1918) : FIRST SERGEANT
- top·knot \tā-nät\ n** (ca. 1688) 1 : an ornament (as a knot of ribbons or a pompom) forming a headdress or worn as part of a coiffure 2 : a crest of feathers or tuft of hair on the top of the head
- top·less \tā-ləs\ adj** (1589) 1 *archaic* : so high as to reach up beyond sight *<and burnt the ~ towers of Ilium —Christopher Marlowe>* 2 : being without a top 3 a : wearing no clothing on the upper body b : featuring topless waitresses or entertainers *<a ~ bars>* c : being a place where topless women are permitted *<a ~ beach>* — **top·less·ness \tā-nəs\ n**
- top·line \tā-līn\ n** (ca. 1909) : the outline of the top of the body of an animal (as a dog or horse)
- top·lofty \tāp-lōf-tē\ also top·loft·i·cal \tāp-lōf-ti-kəl\ adj** [prob. fr. the phrase *top loft*] (1823) : very superior in air or attitude — **top·loft·i·ly \tāp-lōf-tō-lē\ adv** — **top·loft·i·ness \tāp-lōf-tē-nəs\ n**
- top·mast \tāp-mast, -məst\ n** (15c) : the mast that is next above the lower mast and is topmost in a fore-and-aft rig
- top milk n** (1891) : the upper layer of milk in a container enriched by whatever cream has risen
- top·min·now \tāp-mi-(,)nō\ n** (1884) : any of several live-bearers (family Poeciliidae) or killifish (family Cyprinodontidae)
- top·most \tāp-mōst\ adj** (1697) : highest of all : UPPERMOST
- top-notch \tā-nach\ adj** (1900) : of the highest quality : FIRST-RATE *<a ~ work>* — **top·notch·er \tā-nä-chər\ n**
- topo abbr** topographic; topographical
- to·po·cen·tric \tā-pə-sen-trik, tō-\ adj** (ca. 1942) : relating to, measured from, or as if observed from a particular point on the earth's surface : having or relating to such a point as origin *<~ coordinates>* — compare GEOCENTRIC
- top-of-the-line adj** (1963) : TOP-NOTCH; esp. : being or belonging to the highest or most expensive class *<~ camera equipment>*
- to·pog·ra·pher \tā-pä-grä-fər\ n** (1603) : a specialist in topography
- to·po·graph·ic \tā-pə-grä-fik, tō-\ adj** (1632) : of, relating to, or concerned with topography *<~ maps>*
- to·po·graph·i·cal \tā-pi-kəl\ adj** (1571) 1 : TOPOGRAPHIC 2 : of, relating to, or concerned with the artistic representation of a particular locality *<a ~ poem> <~ painting>* — **to·po·graph·i·cal·ly \tā-pi-kəlē\ adv**
- to·pog·ra·phy \tā-pä-grä-fē\ n** [ME *topographie*, fr. LL *topographia*, fr. Gk, fr. *topographēin* to describe a place, fr. *topos* place + *graphein* to write — more at CARVE] (15c) 1 a : the art or practice of graphic delineation in detail usu. on maps or charts of natural and man-made features of a place or region esp. in a way to show their relative positions and elevations b : topographical surveying 2 a : the configuration of a surface including its relief and the position of its natural and man-made features b : the physical or natural features of an object or entity and their structural relationships *<the ~ of human chromosomes>* *<the political ~ of our time>*
- topo·iso·mer·ase \tā-pō-i-sä-mə-rās, -räz\ n** [*top-* + *isomerase*] (1980) : any of a class of enzymes that reduce supercoiling in DNA by breaking and rejoining one or both strands of the DNA molecule
- to·po·log·i·cal \tā-pä-lä-jī-kəl\ adj** (1715) 1 : of or relating to topology 2 : being or involving properties unaltered under a homeomorphism *<continuity and connectedness are ~ properties>* — **to·po·log·i·cal·ly \tā-pi-kəlē\ adv**
- topological group n** (1946) : a mathematical group which is also a topological space, whose multiplicative operation has the property that given any neighborhood of a product there exist neighborhoods of the elements composing the product such that any pair of elements representing each of these neighborhoods form a product belonging to the given neighborhood, and whose operation of taking inverses has the property that for any neighborhood of the inverse of an element there exists a neighborhood of the element itself in which every element has its inverse in the other neighborhood
- topologically equivalent adj** (1915) : related by a homeomorphism
- topological space n** (1926) : a set with a collection of subsets satisfying the conditions that both the empty set and the set itself belong to the collection, the union of any number of the subsets is also an element of the collection, and the intersection of any finite number of the subsets is an element of the collection
- topological transformation n** (1946) : HOMEO MORPHISM
- to·pol·o·gy \tā-pä-lo-jē, tā-\ n, pl -gies** [ISV] (1850) 1 : topographic study of a particular place; specif. : the history of a region as indicated by its topography 2 a (1) : a branch of mathematics concerned with those properties of geometric configurations (as point sets) which are unaltered by elastic deformations (as a stretching or a twisting) that are homeomorphisms (2) : the set of all open subsets of a topological space b : CONFIGURATION *<~ of a molecule> <~ of a magnetic field>* — **to·pol·o·gist \tā-pō-zist\ n**
- top·o·nym \tā-pə-nim, 'tō-\ n** [ISV, back-formation fr. *toponym*] (1899) : PLACE-NAME
- top·o·nym·ic \tā-pə-ni-mik, 'tō-\ adj** (1896) : of or relating to toponyms or toponymy — **top·o·nym·i·cal \tā-pi-mi-kəl\ adj**
- to·pon·y·my \tā-pä-nə-mē, tō-\ n** [ISV, fr. *top-* + Gk *onoma*, onoma name — more at NAME] (1876) : the place-names of a region or language or esp. the etymological study of them — **to·pon·y·mlist \tā-pō-ni-mist\ n**